

Pentz Cast Solutions

Aluminum Alloy Selection Guide

Typical Mechanical Properties of Aluminum Alloys (Sand Cast)

Properties Alloy-Temper	Minimum Tensile Strength (ksi)		Minimum Yield (ksi)		Minimum % Elongation		Minimum Hardness (Brinell)
	Standard Value	Pentz Typical Values	Standard Value	Pentz Typical Value	Standard Value	Pentz Typical Value	Standard Value
A356.0-T6	34	38-42	24	30-32	3.5	4-6	70-105
356.0-T6	30	35-40	20	25-30	3	4-6	55-90
357.0-T6	-	-	-	-	-	-	-
535.0-F or T5	35	36-40	18	20-22	9	10-12	60-90
713.0-F or T5	32	-	22	-	3	-	60-90

Values represent properties obtained from average measurements taken from separately cast test bars.
(-) indicates no data available.

Typical Mechanical Properties of Aluminum Alloys (Permanent Mold)

Properties Alloy-Temper	Minimum Tensile Strength (ksi)		Minimum Yield (ksi)		Minimum % Elongation		Minimum Hardness (Brinell)
	Standard Value	Pentz Typical Values	Standard Value	Pentz Typical Value	Standard Value	Pentz Typical Value	Standard Value
A356.0-T61	37	40-45	26	30-35	5	7-10	70-100
356.0-T6	33	-	22	-	3	-	60-90

Values represent properties obtained from average measurements taken from separately cast test bars.
(-) indicates no data available.

Typical Performance Characteristics of Aluminum Alloys

Characteristics Alloy-Temper	Dimensional Stability	Strength at Elevated Temperature	Corrosion Resistance	Casting Thin Wall and Complex Shapes	Pressure Tight/ Vacuum Tight	Weldability	Machinability	Fluidity	Anodized (Appearance)	Polished (Appearance)	Electroplating	Normally Heat Treated
	A356.0-T6	1	3	2	1	1	1	3	1	4	4	2
356.0-T6	1	3	2	1	1	1	3	1	4	4	1	Y
357.0-T6	2	2	2	1	1	1	3	1	4	3	1	Y
535.0-F or T5	1	3	1	4	5	4	1	5	1	1	2	N
713.0-F or T5	1	4	3	3	4	4	1	4	1	1	2	N

Characteristics are comparatively ranked on a scale from 1 to 5 with 1 ranked as superior.